Code: 9A05801

1

B. Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

DESIGN PATTERNS

(Common to CSE, IT & CSSE)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) Distinguish between iterator and list iterator.
(b) Draw an interaction diagram that performs withdrawal operation.
(c) What arithmetic's are supported by point? Explain them in detail.

2 (a) List and explain the reusable object oriented design aspects of a pattern.
(b) How do we describe design patterns? Explain in detail.

3 (a) What distinguishes pull-down menus from that of glyphs?
(b) Write a detailed note on abstracting of object creation.
(c) Explain the traversal actions in detail.

4 (a) What issues to be considered while designing a factory method? Explain the consequence of the factory pattern.
(b) Who are the different participants involved in the builder pattern. What relation exists between them? Explain it in detail.

5 (a) Explain the role of structural patterns in designing of pattern.
(b) Draw and explain the multiple inheritance interface that illustrates relation between different participants in the adapter pattern.

6 (a) What is the role of interpreter in design of a pattern?
(b) List and explain the various participants involved in design of the interpreter.
(c) List the features that a proxy pattern exploits.

7 (a) Give brief description about the iterator design pattern.
(b) What is the motivation for mediator pattern? Explain it in detail.

8 Explain the following:
(a) Participants of template method.
(b) Benefits and drawbacks of strategy pattern.
(c) Decoupling sender and receiver.

*****

Code: 9A05801

2

B. Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

DESIGN PATTERNS

(Common to CSE, IT & CSSE)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) How can we add and remove the items from list? Explain with a suitable example.
(b) What is an iterator? Explain the various operations that an iterator supports. Explain them in detail.
(c) What is the use of object diagram in modeling? Explain.

2 (a) Discuss in detail about the object interfaces and object implementations.
(b) Distinguish between inheritance versus parameterized types.
(c) Give brief description about the frameworks.

3 (a) Explain the role of formatting in creation of a document editor.
(b) How can we configure windows and windoimps? Explain in detail.

4 (a) What are the liabilities and techniques for implementing the abstract factory pattern? Explain them.
(b) Draw and explain the interaction diagram that illustrates the cooperation between a builder and director.
(c) Who are the participants in factory method? Explain them.

5 (a) What is the motivation for bridge pattern? Explain in detail.
(b) Explain the consequences and implementation issues of a composite pattern.

6 (a) Give brief description about the implementation issues and consequences of chain of responsibility.
(b) Write a detailed note on collaborations, consequences and applicability of command pattern.

7 (a) Describe in detail about the mediator design pattern.
(b) Explain the applicability, structure and participants of iterator pattern.

8 Write short notes on the following:
(a) Documentation and learning aid.
(b) Consequences of template method.
(c) Applicability and Participants of strategy pattern.

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Code: 9A05801

3

B. Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

DESIGN PATTERNS

(Common to CSE, IT & CSSE)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) What is an object diagram? Explain its role in design of a system.
(b) Define a class diagram. Explain the various OMT notations of it.
(c) List the different functions used to access the list.

2 (a) Explain the common causes for redesign a design pattern.
(b) What are the different criteria that selects the right pattern for a given problem?

3 (a) How can we embellish the user interface? Explain with a suitable example.
(b) Explain in detail about the factories and product classes.

4 (a) Explain the role of creational patterns in design of the patterns.
(b) What is the motivation for builder creation pattern? Explain it in detail.
(c) Draw and explain the structure of factory method.

5 (a) What relation exists between the different participants involved in composite pattern? Explain it in detail.
(b) List the different issues that should be considered while using the adapter pattern.

6 (a) Discuss in detail about the façade design pattern.
(b) Explain the applicability, structure and participants of flyweight pattern.

7 (a) What is the motivation for observer pattern? Explain it in detail.
(b) Draw and explain the interaction diagram that illustrates how the objects cooperate to handle a change in list box selection.
(c) Explain the structure of iterator pattern.

8 (a) Present a detailed note on visitor design pattern.
(b) Write short notes on target for refactoring.

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Code: 9A05801

4

B. Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

DESIGN PATTERNS

(Common to CSE, IT & CSSE)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) Distinguish between abstract class and concrete class.
(b) Explain the role of interaction diagrams in design patterns.
(c) Describe the various constructors used in list.

2 (a) Explain the step - by - step approach for selecting the design pattern.
(b) What are the differences between class and interface inheritance?
(c) Explain the compile time structure of a object oriented program.

3 (a) Describe in detail about the various problems associated with Lexi's design.
(b) Explain in detail about the encapsulating the analysis.
(c) Give brief description about the command history.

4 (a) What is the relationship between different participants present in prototype pattern?
(b) Explain the implementation issues and benefits of singleton pattern.

5 (a) Explain when to use the bridge design pattern.
(b) What are the different issues to be considered while applying the decorator pattern?
(c) Draw and explain the structure of composite pattern.

6 (a) Discuss in detail about the proxy design pattern.
(b) Explain the role of behavioral patterns in design of the patterns.

7 (a) What is the key idea of state pattern? Explain it in detail.
(b) Explain the object structure of a mediator pattern.
(c) Explain the implementation variants of iterator pattern.

8 (a) Give brief description about the strategy design pattern.
(b) Explain the role of template method in designing of the patterns.

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Code: 9A05803

1

B.Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

WEB SERVICES

(Computer Science and Engineering)

Time: 3 hours Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1 (a) Write about the evolution of distributed computing.
(b) Write a note on:
(i) CORBA.
(ii) JAVA RMI.

2 (a) Explain the merits and demerits of using web services.
(b) What are the goals of web services?

3 (a) Explain about the technologies used to implement web services.
(b) Discuss about web services communication.

4 (a) Discuss various techniques of message exchange in SOAP.
(b) Discuss on:
(i) SOAP encoding.
(ii) SOAP communication.

5 (a) Discuss the goals of SOAP in web services.
(b) What is role of java in SOAP?

6 (a) Write about the anatomy of WSDL.
(b) What are the limitations of WSDL?

7 (a) Explain the process of deleting information in a UDDI resister.
(b) How publishing can be done in API?

8 (a) Write an overview on NET and J2EE.
(b) Explain the following:
(i) XKMS structure.
(ii) XML digital structure.

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Code: 9A05803 **2**

B.Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

WEB SERVICES

(Computer Science and Engineering)

Time: 3 hours Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) Discuss the technology of distributed computing in detail and mention the challenger of distributed computing.
(b) What is MOM? Explain.

2 (a) How web services can be applied in your real time applications? Explain.
(b) List out the opportunities of web services in www.

3 (a) Discuss about the two factors of web services architectures.
(b) Define a web service. What is their approach to distributed computing.

4 (a) Explain the procedure of binding SOAP to a transport protocol.
(b) Write a short note on Asyrhronous SOAP.

5 Elaborate on the relationship between SOAP and web services

6 (a) What are the implications of WSDL model?
(b) What are the goals of WSDL?

7 (a) Write down the procedure of storing WSDL interfaces in a UDDI registry.
(b) Discuss in detail about service discovery mechanisms.

8 (a) Write about various means of ensuring interoperability.
(b) Write a short note on XML security frame work.

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Code: 9A05803 **3**

B.Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

WEB SERVICES

(Computer Science and Engineering)

Time: 3 hours Max Marks: 70

Answer any FIVE questions
All questions carry equal marks
*****

1 (a) Explain the role of J2EE and XML in distributed computing.
(b) Discuss the challenges of distributed computing.

2 (a) What are the tools what are used to enable web services?
(b) Discuss the basic operational model of web services.

3 (a) Explain about the building blocks web services.
(b) What are the basic steps of implementing web services?

4 (a) How SOAP can be secured? Explain.
(b) Write short note on:
(i) SOAP communication.
(ii) SOAP messaging.

5 (a) Explain the steps involved in building the web services.
(b) Write down the characteristics of SOAP in web services.

6 What is WSDL? What are the tools that can be used to implement WSDL? Explain.

7 (a) Discuss in detail about UDDI registry.
(b) List out the limitations of UDDI.

8 Explain in detail about web services security.

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Code: 9A05803 **4**

B.Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

WEB SERVICES

(Computer Science and Engineering)

Time: 3 hours Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) Explain client/server architecture.
(b) Mention the challenges in distributed computing.

2 (a) Discuss the benefits of using web services.
(b) What is a web service? Write the applications of web services.

3 With a neat sketch explain the architecture of web services and also its characteristics.

4 (a) Discuss in detail about the message structure of SOAP.
(b) Elaborate on the fundamentals of SOAP.

5 (a) How SOAP web services can be developed using java? Explain.
(b) Discuss the limitations of SOAP.

6 (a) Explain the life cycle of web services in detail.
(b) What do you mean by binding in web service? Discuss about WSDL binding.

7 (a) Explain about UDDI data structures.
(b) What is the role of service discovery in SOA? Explain.

8 (a) What are the guidelines used for signing XML documents.
(b) Write a short note on XML digital signatures.

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Code: 9A05807

1

B.Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

WIRELESS SENSOR NETWORKS

(Common to CSE, IT & CSSE)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions.
All questions carry equal marks.

*****

1 (a) Explain IEEE 802.11 protocol architecture in detail.
(b) Why cellular networks require handover? Explain the reason in detail.

2 (a) Explain in detail about carrier sense multiple access scheme for reducing probability of collision.
(b) Write a short note on slotted aloha.

3 (a) Explain the packet delivery to and from the mobile node using an example network.
(b) Explain in detail about dynamic host configuration protocol.

4 (a) Explain the advantages and disadvantages of snooping TCP.
(b) Explain in detail about the mobile TCP.

5 (a) Explain briefly the functional block diagram of typical sensor node.
(b) Explain in detail about the applications of wireless sensor networks.

6 (a) What are the design issues of MAC protocols of wireless sensor networks?
(b) Write a short note on Query based routing.

7 (a) Write a short note on sensor node hardware.
(b) Explain briefly about the augmented general purpose computer.

8 Write a short note on:
(a) NS-2
(b) TOSSIM.

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Code: 9A05807

2

B.Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

WIRELESS SENSOR NETWORKS

(Common to CSE, IT & CSSE)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions.

All questions carry equal marks.

*****

1 (a) Discuss about the three different physical layers supported by IEEE 802.11.
(b) Explain briefly the Bluetooth security components and protocols.

2 (a) Explain how multi access with collision avoidance scheme solves the hidden terminal problem.
(b) Explain in detail about code division multiple access.

3 (a) What is the need for registration in mobile computing? Explain the registration process.
(b) Explain in detail about the reverse tunneling.

4 (a) What are the advantages and disadvantages of indirect TCP?
(b) Write a short note on snooping TCP.

5 (a) Explain the features of ideal sensor node in detail.
(b) Explain how energy is conserved in sensor networks.

6 (a) Briefly classify the different wireless sensor networks in detail.
(b) Explain in detail about the hierarchal based routing.

7 Explain in detail about the traditional embedded system programming interface.

8 (a) Explain in detail about the timer component of field monitor application.
(b) Explain briefly about the implementation definition of timer component in nesC.

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Code: 9A05807

3

B.Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

WIRELESS SENSOR NETWORKS

(Common to CSE, IT & CSSE)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions.

All questions carry equal marks.

*****

1 (a) Explain briefly the advantages and disadvantages of radio transmission technology.
(b) Explain the functional architecture of a GSM system with a neat diagram.

2 Write a short notes on:
(a) FDMA
(b) TDMA.

3 (a) Explain in detail about the agent discovery and agent advertisement.
(b) Explain different entities and terms associated with mobile IP.

4 (a) What is slow start? Explain in detail about slow start mechanism of TCP.
(b) Write a short note on indirect TCP.

5 (a) Why MANET's are not well suited for wireless sensor networks? Explain.
(b) Explain the challenges for routing protocols design for wireless sensor networks.

6 (a) Explain briefly the hardware platform of a wireless sensor node.
(b) Explain the sequential assignment routing scheme in detail.

7 (a) Explain the categories of different set of tradeoffs in the design choices of sensor node hardware.
(b) What is the problem in scale up for programming of sensor network?

8 (a) Explain briefly about the interface definition of timer component in nesC.
(b) Explain briefly the component of node level simulator.

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Code: 9A05807

4

B.Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

WIRELESS SENSOR NETWORKS

(Common to CSE, IT & CSSE)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) Explain in detail about the IEEE 802.11 MCA data frame and its fields.
(b) Explain briefly the advantages and disadvantages of infrared technology.

2 (a) Compare and contrast between SDMA and CDMA.
(b) Explain in detail about the hidden and exposed terminals.

3 Explain the following terms:
(a) Mobile node.
(b) Foreign agent.
(c) Case of address.
(d) Home agent.

4 (a) Explain the congestion control mechanism of TCP.
(b) What is selective transmission? How it is useful extension of TCP?

5 (a) Explain the advantages of wireless sensor networks over wired ones.
(b) Explain the reasons for not using traditional networks be used directly in wireless sensor networks. Why?

6 (a) What are the schemes to allocate single broadcast channel among the competing nodes? Explain.
(b) Explain some important goals that current research in the dynamic nature of wireless sensor networks.

7 Explain in detail about the MICA Mote architecture with a neat diagram.

8 (a) Write a short note on TINY OS.
(b) Explain in detail about the synchronous and asynchronous code of nesC.

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Code: 9AHS701

1

B.Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

MANAGEMENT SCIENCE

(Common to CSE, IT and CSSE)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 Critically evaluate the different leadership stages in an organization.

2 Explain the concept of organization as a process and as a structure.

3 Define factory layout. Discuss the objectives of factory layout.

4 What are the objectives and advantages of scientific inventory control?

5 What is Merit rating? What are its benefits and limitations? Explain any three methods of merit rating.

6 The following table gives the activities in a construction project and time duration.

Activity	Preceding activity	Normal time(days)
1 - 2	-	20
1 - 3	-	25
2 - 3	1 - 2	10
2 - 4	1 - 2	12
3 - 4	1 - 3, 2 - 3	5
4 - 5	2 - 4, 3 - 4	10

(a) Draw the activity network of the project.
(b) Find the total float and free float for each activity.
(c) Determine the critical path and project duration.

7 Write short notes on the following:
(a) Generic strategy alternatives.
(b) Possible strategy variables.
(c) Pricing collaborations.
(d) Strategic deviations.

8 How does TQM award model help in the process of bench marking? Explain.

*****

Code: 9AHS701

2

B.Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

MANAGEMENT SCIENCE

(Common to CSE, IT and CSSE)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 Explain the Maslow's theory of Hierarchy of human needs.

2 Briefly explain the following:
(a) Line organization and functional organization.
(b) What is matrix organization?

3 What is plant layout? What are its different types? How do you control plant layout?

4 (a) What are the various functions of marketing?
(b) What factors influence consumer behaviour?

5 (a) Explain the selection procedure and list various methods involved in it.
(b) What are selections tests? What are various kinds of tests?

6 A project consists of 8 activities precedence relation and activity times are given. Draw the network and compute the critical path. Show the slack for each activity in a tabular column.

Activity	P	Q	R	S	T	U	V	W
Immediate predecessor	-	-	-	R	P, Q	T, S	S	U, V
Activity time(weeks)	12	20	28	12	28	12	8	8

7 Explain the strategies to improve sales performance of a strategic business unit.

8 Critically evaluate the ERP market in India.

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Code: 9AHS701

3

B.Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

MANAGEMENT SCIENCE

(Common to CSE, IT and CSSE)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) Explain the importance of management.
(b) What are the challenges you have to face as a manager? Discuss.

2 What is meant by line and staff organization? Briefly explain with examples.

3 What are the factors influencing the fixed layout? List out its advantages and disadvantages.

4 Explain the following terms with the help of a neat diagram.
(a) Economic order quantity and lead time.
(b) Safety stock and re-order point.

5 (a) Explain the concept and various levels of human resource planning.
(b) Discuss briefly the functions of a HR Manager.

6 (a) What is cost slope? What is its significance in project crashing?
(b) Explain how you determine the probability of meeting the scheduled date of completion of a project.

7 Illustrate how multinationals have been translating their global strategies to suit to Indian context.

8 (a) What is the role of automation in JIT?
(b) Explain the basic elements of JIT.

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Code: 9AHS701

4

B.Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

MANAGEMENT SCIENCE

(Common to CSE, IT and CSSE)

Time: 3 hours Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 What are the basic principles of management according to Henry Fayol's?

2 Explain the significance and advantages of functional organization.

3 What is process layout? Explain its merits and demerits.

4 With reference to an inventory model explain the following:
(a) Maximum stock.
(b) Safety stock.
(c) Lead time.
(d) Reorder point.

5 Define a job. Explain how job analysis forms the basis for job description and job specifications. How does it help the personnel manager in designing a job?

6 (a) Distinguish between PERT and CPM.
(b) What do you mean by project crashing? State the procedure involved in crashing.

7 (a) Define Mission and explain the components of mission statement.
(b) What do you understand by strategic business unit? Discuss its role and relevance in corporate planning.

8 (a) Define MRP and CRP and BOM.
(b) How MRP differs from inventory control.

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